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Case Report / Olgu Sunumu

Risperidone Induced Bradycardia and Syncope in A Case with Volatile Substance Abuse

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ABSTRACT

Risperidone induced bradycardia and syncope in a case with volatile substance abuse

There are studies reporting that cardiac arrest, ventricular arrhythmia and sudden death might be seen in patients treated with antipsychotic drugs. Besides, cardiac arrhythmia and sudden death may be observed in volatile substance abuse.

We report a patient with volatile substance abuse, who had bradycardia and syncope arised with the initiation of risperidone treatment. The patient was male, aged 15 years and 8 months, had started to snuff adhesive almost daily for the last two months. He was referred with complaints of uneasiness, anxiety, andtalking to himself. He had isolated himself socially at recent times. According to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), diagnosis of "volatile substance abuse" and "major depressive disorder with psychotic characteristics" was established and 1.5 mg/day risperidone treatment was initiated. At the follow-up visit one week later, chest pain and frequent syncope attacks were observed. Sinusal bradycardia was detected in his ECG (Electrocardiogram). Upon discontinuation of risperidone, syncope attacks disappeared and ECG became normal.

When antipsychotic use is required in a person abusing volatile substances, cardiac adverse effects must be taken into consideration. In the presence of any previous antipsychotic use with cardiac adverse effects in patients abusing volatile substance, follow-ups with ECG may be necessary, especially at the early phase of antipsychotic treatment.

Key words: Antipsychotic, bradycardia, risperidone, syncope, volatile substance

ÖZET

Uçucu madde kötüye kullanımı olan bir olguda risperidon ile indüklenen bradikardi ve senkop

Antipsikotik ilaçlarla tedavi edilen hastalarda kardiyak arrest, ventriküler aritmi ve ani ölüm gerçekleşebileceğini bildiren çalışmalar mevcuttur. Yine uçucu madde kötüye kullanımında da kardiyak aritmiler ve ani ölüm ortaya çıkabilir.

Bu yazıda, uçucu madde kötüye kullanımı olan ve risperidon ile tedaviye başlanılmasını takiben bradikardi ve senkop ortaya çıkan bir olgu sunulmuştur.

İki ay boyunca hemen her gün yapıştırıcı madde koklayan 15 yaş 8 aylık erkek hasta sıkıntı, bunaltı, kendi kendine konuşma yakınmaları ile getirilmişti. Son dönemlerde sosyal olarak kendini izole etmekteymiş. Ruhsal Bozuklukların Tanısal ve Sayımsal El Kitabı (DSM-IV)'e göre 'uçucu madde kötüye kullanımı' ve 'psikotik özellikleri olan majör depresif bozukluk' tanıları konularak, risperidon 1,5 mg/gün tedavisi başlandı. Bir hafta sonraki kontrolünde göğüs ağrısı ve sık sık bayılma atakları ortaya çıktı. Çekilen EKG'sinde (Elektrokardiyogram) sinüzal bradikardi mevcuttu. Risperidonun kesilmesinin ardından senkop atakları ortadan kalktı, EKG'si normale döndü.

Uçucu madde kullanan bireylerde antipsikotik kullanımı gerektiğinde kardiyak yan etkiler göz önünde bulundurulmalıdır. Uçucu madde kullanımı olan hastada daha önce kardiyak yan etkileri bildirilen antipsikotik başlanması durumunda, özellikle erken dönemde EKG takibi yaptırılması gerekli olabilir.

Anahtar kelimeler: Antipsikotik, bradikardi, uçucu madde, risperidon, senkop

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INTRODUCTION

Volatile substance abuse (VSA) is frequent in Turkey and in the world (1-3). In a study, lifelong volatile substance use is 2.1% -among high school students in Turkey (3). this rate becomes higher among homeless children (4).

VSA is associated with many unwanted effects and psychosocial outcomes. Major depression, suicidal thoughts and attempts, anxiety disorders, psychotic

disorders and other substance abuse disorders are more frequent in persons who abuse volatile substances (5,6). Psychotic symptoms in these persons must be distinct due to substance intoxications.

Choice of medication becomes important in patients with substance abuse. Usage of second generation antipsychotic drugs in the treatment of psychotic symptoms is preferred because of their selectivity on dopamine receptor antagonisms and their effects on serotonin, histamine and noradrenaline pathways (7).

However, there are studiesreporting that cardiac arrest, ventricular arrhythmia and sudden death might occur in patients treated with antipsychotic drugs (8-10). In a controlled study, cardiac arrest and ventricular arrhythmia rates of the schizophrenia patients treated with clozapine, haloperidol, risperidone or thioridazine were analyzed and more cardiac arrest, ventricular arrhythmia and death were detected in schizophrenia patients treated with antipsychotic drugs than control group (11). In four antipsychotic drugs assessed in that study, it is reported that risperidone was the only drug which caused cardiac arrest, ventricular arrhythmia and death more than haloperidol. But the authors of study assessed this as an incidental finding resourced from the sample's age and other characteristics (11).

Cardiac arrhythmia and sudden death may occur in VSA also (12). In United Kingdom 1857 deaths associated with volatile substances were reported between 1971 and 1999 (13). Most of the deaths -were thought to be caused by ventricular arrhythmia engaged after first sniffing of the volatile substance, which is called "sudden sniffing death" (14). Volatile substances may cause fatal ventricular arrhythmias by sensitizing myocardium to endogen catecholamines (15). Cruz et al. (16) partially explained the arrhythmogenic effects of toluene in volatile substances in isolated rat myocytes; dependent to concentration, toluene inhibits temporary cardiac voltage dependent sodium channels.

In this report, a case with VCA who experienced bradycardia and syncope after risperidone treatment of depressive and psychotic symptoms were presented.

CASE

Fifteen years 8 months aged boy was referred to child and adolescent psychiatry outpatient clinic because of uneasiness, distress and anxiety which had begun 9 months ago. He was sniffing adhesives daily and had serious self-injury behavior. He was suffering from difficulty in sleeping sleeping during the lessons in school and had frequent non attendance to school for 4 months. He was talking to himself and avoiding being with others. In the interview with him, his affect was anxious, mood was dysphoric, and associations were sometimes rambling. In general he was not answering the questions or he was flying off at a tangent. In his both arms there were too many new and old scars. His Child Depression Inventory score was 28 (17).

According to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), he was diagnosed as "volatile substance abuse" and "major depressive disorder with psychotic characteristics" and suggested to refer to an inpatient clinic. But his family rejected this suggestion because of economic reasons. Risperidone 1.5 mg daily was initiated. After one week of the treatment, he was complaining for chest pain. Along the last week, he had syncope at different times and was brought to emergency department by foreigners that came across the situation. It was implied that he had a head trauma once because of syncope. Before this week he had never had a syncope and he was reported that he had sniffed glue also everyday throughout the week. He was using risperidone regularly.

He was consulted to cardiology, postural hypotension and bradycardia were detected. According to cardiologist's suggestion, risperidone was stopped and ECG was repeated after a week. Cardiac rate was with in normal limits, he did not experience any syncope after ceasing risperidone. He had no chest pain. In control visits, he has been on glue sniffing but no more syncope was reported. He was expedited to an education and research hospital for follow up and ongoing treatment.

DISCUSSION

It has been known for many years that VSA might cause cardiac arrhythmias and sudden death (13,14). Antipsychotic agents may also cause cardiac adverse effects like delayed ventricular repolarization and arrhythmias, conduction disturbances, left ventricular functional disturbances, sinus node abnormalities, receptor blockades, myocarditis, cardiomyopathies, postural hypotension (10). When literature examined for risperidone induced cardiac adverse effects in adolescents, case reports attract attention. A 15 year old boy whohad hypotension and tachycardia aroused after high doses of risperidone was reported (18).

Olgun et al. (19) reported a boy whohad syncopes with long pauses (>3 sec) after risperidone usage in therapeutic doses. But there was no ECG of our case when he fainted. Our case did not reportany syncope before drug initiation and he continued to abuse volatile substance when he was using risperidone, his chest pain also began after using risperidone. Therefore it is thought that volatile substance might set an environment for risperidone's cardiac side effects. After ceasing risperidone, syncope was disappeared and abnormality in ECG was not detected.

In Rey et al.'s (20) retrospective study, it is reported that sudden death due to antipsychotic drugs was a dose dependent side effect. In our case reducing the risperidone dosage was not considered. Because the boy has been continuing VSA and the volatile substance was assumed as the ground for cardiac rhythm problems. Based on the reports in literature about sudden cardiac deaths associated with either antipsychotics or VSA, it was decided that to stop the antipsychotic drug was necessary. However changing the antipsychotic might be a choice in this step. However, to the best of our knowledge, there is no study about the cardiac interactions of risperidone and volatile substances.

In conclusion, in the patient with VSA biological changes may arise and may lead to severe side effectsof the drug. For this reason in patients with VSA, it would be necessary to monitor cardiac functions, when an antipsychotic drug is initiated.

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